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PATENT APPLICATION

ATTORNEY DOCKET NO. 10010118-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Fabio Casati et al.

Confirmation No.: 6026

Application No.: 10/066,098

Examiner: LaShanya Renee Nash

Filing Date: 01-31-2002

Group Art Unit: 2153

Title: Dynamic Conversation Logic Selection Method and System

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Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on March 7, 2007.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month $120	☐ 2nd Month $450	☐ 3rd Month $1020	☐ 4th Month $1590

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of $ 500. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

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Date of facsimile: May 7, 2007
Typed Name: Ginger Yount
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Fabio Casati, et al.	§	Art Unit:	2153
Serial No.:	10/066,098	§	Examiner:	Lashanya Renee Nash
Filed:	January 31, 2002	§		
For:	Dynamic Conversation Logic Selection Method and System	§	Atty. Dkt. No.:	10010118-1 (HPC.0311US)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-26 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Company.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-26 have been finally rejected and are the subject of this appeal.

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Ginger Yount

Ginger Yount

IV. STATUS OF AMENDMENTS

No amendments after final rejection were filed.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites a method for selecting a conversation logic (Spec., 8:21-26) at run-time for a workflow definition (Fig. 2:204) that includes at least one node with no hard-coded conversation logic (Spec., 18:4-6), the method comprising the steps of:

a) maintaining (Fig. 4:410) a conversation logic repository (Fig. 2:211) that includes at least one conversation logic that is external to the workflow definition (Spec., 9:3-10);

b) when executing the node with no hard-coded conversation logic, dynamically discovering (Fig. 4:420) a service associated with the node with no hard-coded conversation logic (Spec., 18:4-8; 19:21-20:2);

c) determining (Fig. 4:430) a corresponding conversation logic in the conversation logic repository based on the discovered service (Spec., 10:20-21; 11:15-16; 18:9-13; 19:21-20:2); and

d) dynamically plugging (Fig. 4:440) in the determined conversation logic into the node at run time (Spec., 11:16-18; 18:14-15; 19:10-12).

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Independent claim 3 recites a method for selecting a conversation logic (Spec., 8:21-26) at run-time comprising the steps of:

maintaining (Fig. 4:410) a conversation logic repository (Fig. 2:211) that includes at least one conversation logic (Spec., 9:3-10);

at run-time, sending a service selection query to an electronic services platform (Fig. 3:330) or other service broker (Spec., 11:6-7, 11-13; 18:6-8);

receiving a returned service identifier (Spec., 11:15-16; 18:9-11); and

selecting a conversation logic from the conversation logic repository based on the returned service identifier (Spec., 10:19-21; 18:9-13; 19:21-20:2).

Independent claim 11 recites a system for dynamically selecting a conversation logic (Spec., 8:21-26) at run-time for a workflow definition (Fig. 2:204) that includes at least one node with no hard-coded conversation logic (Spec., 18:4-6) comprising:

a) a workflow engine (Fig. 3:310; Fig. 10:1000) for processing workflow definitions (Spec., 11:2-4, 9-13; 16:17-25);

b) a conversation logic repository (Fig. 2:211) that includes at least one conversation logic and that is external to the workflow definition (Spec., 9:3-10);

c) a dynamic conversation logic selection mechanism (Fig. 2:210) for receiving a service identifier that is associated with a service at run-time and based thereon for selecting a conversation logic for interacting with the service at run-time (Spec., 9:1-7; 10:19-21; 11:15-16; 18:9-13; 19:21-20:2).

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acharya (US 2003/0140119) in view of Coupal (US 6,931,574).

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Claims 1-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Acharya (US 2003/0140119) in view of Coupal (US 6,931,574).

1. Claims 1, 21, 24, 25.

It is respectfully submitted that a *prima facie* case of obviousness has not been established with respect to independent claim 1. "The PTO has the burden under section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988). The PTO "can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *Id.*

The objective teachings of the prior art references indicate that the claimed subject matter is clearly non-obvious. To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed. *See Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). As held by the U.S. Supreme Court, two of these basic factual inquiries include: (1)

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determining the scope and content of the prior art; and (2) ascertaining the differences between the prior art and the claims at issue. *Id.*

In making the obviousness rejection, the Examiner conceded that Acharya fails to disclose maintaining a conversation logic repository that includes at least one conversation logic that is external to the workflow definition. 12/7/2006 Office Action at 6. However, the Examiner also made several erroneous factual findings with respect to Acharya in the obviousness analysis. The Examiner incorrectly stated that Acharya discloses the other elements of claim 1, namely determining a corresponding conversation logic in the conversation logic repository based on the discovered service, and dynamically plugging in the determined conversation logic into the node (of the workflow definition) at run time.

These erroneous factual findings render the obviousness analysis defective. With respect to the determining task, the Examiner cited ¶ [0037] of Acharya. 12/7/2006 Office Action at 6. This passage of Acharya describes a service detector module of a service discovery proxy (element 102 in Fig. 1 of Acharya) that receives a service query and determines the appropriate communication protocol to use to send queries to local devices for discovering services of such local devices. Selecting the appropriate communication protocol to use for communicating with local devices is not the same as determining a corresponding *conversation logic* based on the *discovered service*, as recited in claim 1. In fact, note that the communication protocol that is selected by the service detector module of the service discovery proxy in Acharya relates to sending queries from the service discovery proxy to local devices to discover services provided by such local devices. Thus, the operation described in ¶ [0037] of Acharya relates to selecting the appropriate communication protocol to allow the discovery of services; therefore, clearly, the operations in ¶ [0037] of Acharya do not determine a corresponding conversation logic based on

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the *discovered* service, because the communication protocol selection operation in ¶ [0037] has to be performed *before* the service discovery proxy can determine services of local devices.

Paragraph [0037] of Acharya also discloses selecting a service discovery protocol—however, like the communication protocol, this service discovery protocol has to be *first* selected before service discovery can proceed.

In the Response to Arguments section of the Office Action, the Examiner cited ¶¶ [0032]-[0033] of Acharya as rebutting Appellant's arguments above. 12/7/2006 Office Action at 3. The Examiner stated that "Acharya discloses formatting the service discovery *responses* based on the discovered service and further according to the discovered services' protocols (paragraphs [0032]-[0033])." *Id.* (emphasis in original). The Examiner also stated that "[t]his is contrary to Applicant's assumption, as the selected services cannot provide a *response* to a discovery query *prior to being discovered*." *Id.* (emphasis in original).

The Examiner's citation of ¶¶ [0032]-[0033] does not change the fact that the Examiner has still improperly identified ¶ [0037] as disclosing the task of determining a corresponding conversation logic in the conversation logic repository *based on the discovered service*. Paragraph [0037] of Acharya specifically refers to the service detector module of the service discovery proxy that can support "a plurality of physical communication media, link protocols, network protocols, transmission protocols, and service discovery protocols." This paragraph refers to determining the appropriate communication protocol to use for performing service discovery. In fact, ¶ [0037] of Acharya explicitly states that the role of the service detector module "includes performing service discovery in accordance with the selected service discovery protocol." This statement unambiguously indicates that the selection of the communication

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protocol and the service discovery protocol disclosed in ¶ [0037] is performed *prior* to the service discovery tasks of ¶¶ [0031]-[0034] of Acharya.

Another fundamental error made by the Examiner is that there is absolutely nothing in ¶¶ [0032]-[0033] of Acharya that discloses the determining of a corresponding conversation logic *based on the discovered service.* The passages refer to service discovery; there is no teaching or suggestion that this service discovery is then used to determine a corresponding conversation logic. In fact, there is nothing in ¶ [0037] of Acharya to suggest that the communication protocol or service discovery protocol referred to in that passage is determined *based on the discovered service as discovered using the service discovery of ¶¶* [0031]-[0033] of Acharya.

Yet another error made by the Examiner is the following: even if the communication protocol of ¶ [0037] of Acharya can be considered the conversation logic recited in claim 1, it is noted that Acharya provides absolutely no teaching or suggestion of dynamically *plugging* in the determined conversation logic into the node of the workflow definition at run time. The Examiner cited ¶¶ [0031]-[0034] as disclosing the dynamic plugging task of claim 1. However, note that the cited passages of Acharya refer to the service discovery proxy responding to a request for service discovery by sending queries to local devices and receiving responses to such queries regarding available services provided by the local devices. The determining of services available at local devices, as performed in ¶¶ [0031]-[0034] of Acharya, clearly does not teach or suggest dynamically plugging in the determined conversation logic into the node at run time.

In response to the above arguments, the Examiner cited ¶ [0031] of Acharya, and more specifically to the teaching in Acharya that the service discovery response is modified. 12/7/2007 Office Action at 4. The Examiner equated the modifying of the service discovery response with "dynamically plugging in the determined conversation logic into the node at run time," as recited

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in claim 1. The modification of the service discovery response noted by the Examiner actually is mentioned in ¶ [0032] of Acharya, which states that the response to the service discovery received from the local device is customized by formatting, filtering, aggregating, and/or selecting particular responses. The customized response is then sent back to the original inquirer. Modifying the response by customizing such response, where the customizing includes formatting, filtering, aggregating, or selecting particular responses, clearly provides no suggestion of plugging in a determined conversation logic into a node of a work flow definition at run time. It is important to note that the Examiner equated the conversation logic of claim 1 with either the communication protocol or service discovery protocol of ¶ [0037] of Acharya. There is absolutely no indication whatsoever that the communication protocol or service discovery protocol of ¶ [0037] of Acharya constitutes conversation logic that can be plugged into the response mentioned in ¶ [0032] of Acharya.

Coupal does not disclose or suggest elements noted above as missing from Acharya. Coupal describes a protocol analyzer for analyzing the content of a data frame to determine characteristics of the content of the data frame. Coupal, 6:29-44. The data frame analysis performed by Coupal provides absolutely no suggestion of determining a corresponding conversation logic in a conversation logic repository based on a discovered *service*, and dynamically plugging the determined conversation logic into a node of a workflow definition at run time.

Thus, as established by the analysis of the cited references above, there are substantial differences between the claimed invention and the prior art cited by the Examiner, namely the hypothetical combination of Acharya and Coupal. Specifically, it is clear that the hypothetical

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combination of Acharya and Coupal does not teach or suggest all elements of claim 1. In view of this defect, it is clear that the Examiner has failed to establish a *prima facie* case of obviousness.

Moreover, the teachings of Acharya and Coupal are quite un-related to each other. As mentioned above, Acharya relates to using a service discovery proxy to discover services provided by local devices within a local domain, in response to a request from an inquirer. Acharya, ¶¶ [0029]-[0033]. In contrast, Coupal relates to a protocol analyzer that analyzes a data frame to ascertain characteristics of the content of the data frame, where the data frame is captured on the network. Coupal, 6:29-37. The ascertained characteristics include the protocols used in the data frame. Coupal, 6:37-43. The protocol analyzer of Coupal, which uses the protocol database 34 cited by the Examiner, is completely unrelated to the subject matter of Acharya. In fact, a person of ordinary skill in the art would not have been motivated to use the protocol analyzer (and the associated protocol database) in the system of Acharya, which relates to discovering services in local devices. As noted by a recent U.S. Supreme Court case, it is important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *KSR International Co. v. Teleflex, Inc.*, 2007 U.S. LEXIS 4745, 36 (2007). Here, due to the un-related teachings of Acharya and Coupal, no reason existed to combine the teachings of the references to achieve the claimed invention. In fact, what the Examiner has engaged in is to use impermissible hindsight to piece together un-related elements of the prior art. As cautioned by the Supreme Court in *Graham v. John Deere,* impermissible hindsight reconstruction cannot be used to combine reference teachings. *Graham v. John Deere,* 383 U.S. at 36 ("They may also serve to 'guard against slipping into use of hindsight,'...and to resist the temptation to read into the prior art the teachings of the invention in issue.") (citations omitted).

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In view of the foregoing, it is clear that the Examiner has failed to establish a *prima facie* case of obviousness against claim 1 and its dependent claims.

Therefore, reversal of the final rejection of the above claims is respectfully requested.

2. Claim 2.

Claim 2 depends from claim 1 and is thus allowable for at least the same reasons as claim 1. Moreover, claim 2 recites receiving a service reference, and using the service reference to determine a conversation logic for the determined service. The Examiner cited the "response" discussed in ¶¶ [0032]-[0034] of Acharya as being the service reference. 12/7/2006 Office Action at 10. The Examiner then cited ¶¶ [0035]-[0039] of Acharya as disclosing the using of such service reference to determine a conversation logic for the determined service. Even if the "response" discussed in ¶¶ [0032]-[0034] can be considered the service reference of claim 2, it is noted that there is absolutely no teaching in ¶¶ [0035]-[0039] that such responses are used to determine a conversation logic for the determined service, as recited in claim 2.

Therefore, for the above additional reasons, reversal of the final rejection of claim 2 is respectfully requested.

3. Claims 3-10, 22.

A *prima facie* case of obviousness has also not been established with respect to independent claim 3 over Acharya and Coupal. The Examiner erroneously stated that Acharya teaches the selecting of a conversation logic from a conversation logic repository based on a returned service identifier (that was received in response to a service selection query sent to an electronic services platform or other service broker). The Examiner cited ¶¶ [0037]-[0038] of Acharya as disclosing the selecting task of claim 3. 12/7/2006 Office Action at 7. The cited

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passages of Acharya refer to determining an appropriate communication protocol to use for the purpose of sending queries to local devices to discover services provided by the local devices, and then transmitting a response from the service discovery proxy back to the inquirer containing the responses from the local devices. The cited passage also refers to selecting a service discovery protocol before service discovery can be performed. However, there is no indication that this service discovery protocol is selected based on a returned service identifier.

In the Response to Arguments section of the Office Action, the Examiner cited ¶¶ [0031]-[0032] of Acharya, and more particularly, the "list of services" mention in ¶ [0031]. The Examiner again appears to have confused what is performed in ¶¶ [0031]-[0033] of Acharya and what is performed in ¶¶ [0037]-[0038] of Acharya. As discussed above, selection of the communication protocol or the service discovery protocol is performed *prior* to the service discovery of ¶¶ [0031]-[0033]. Therefore, there is absolutely no teaching or suggestion in Acharya that the communication protocol or service discovery protocol in ¶¶ [0037] of Acharya is based on a service identifier.

Coupal also fails to teach or suggest the claim elements that are missing from Acharya. Therefore, since the claimed invention and the cited prior art (in this case the hypothetical combination of Acharya and Coupal) differ significantly, the subject matter claimed is clearly non-obvious over the cited references.

Moreover, as discussed above, the claims are non-obvious for the additional reason that a person of ordinary skill in the art would not have recognized a reason to combine the teachings of Acharya and Coupal to achieve the claimed invention.

Therefore, a *prima facie* case of obviousness has not been established with respect to claim 3 and its dependent claims.

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In view of the foregoing, reversal of the final rejection of the above claims is respectfully requested.

4. Claims 11-20, 23, 26.

Independent claim 11 recites a dynamic conversation logic selection mechanism for receiving a service identifier that is associated with a service at run-time and based thereon for selecting a conversation logic for interacting with the service at run-time.

For reasons similar to those given above with respect to claim 3, the asserted combination of Acharya and Coupal does not disclose or suggest the dynamic conversation logic selection mechanism for receiving a service identifier that is associated with a service at run-time and based thereon for selecting a conversation logic for interacting with the service at run-time. Therefore, claim 11, and its dependent claims, are non-obvious over Acharya and Coupal.

For the foregoing reasons, reversal of the final rejection of the above claims is respectfully requested.

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CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

1. A method for selecting a conversation logic at run-time for a workflow definition that includes at least one node with no hard-coded conversation logic, the method comprising the steps of:

a) maintaining a conversation logic repository that includes at least one conversation logic that is external to the workflow definition;

b) when executing the node with no hard-coded conversation logic, dynamically discovering a service associated with the node with no hard-coded conversation logic;

c) determining a corresponding conversation logic in the conversation logic repository based on the discovered service; and

d) dynamically plugging in the determined conversation logic into the node at run time.

2. The method of claim 1

wherein the step of when executing the node with no hard-coded conversation logic, dynamically discovering a service associated with the node with no hard-coded conversation logic includes the steps of:

determining a service based on a service selection rule;

receiving a service reference; and

wherein the step of determining a corresponding conversation logic in the conversation logic repository based on the discovered service further includes the step of

using the service reference to determine a conversation logic for the determined service.

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3. A method for selecting a conversation logic at run-time comprising the steps of:
maintaining a conversation logic repository that includes at least one conversation logic;
at run-time, sending a service selection query to an electronic services platform or other service broker;
receiving a returned service identifier; and
selecting a conversation logic from the conversation logic repository based on the returned service identifier.

4. The method of claim 3 wherein each conversation logic is associated with at least one service.

5. The method of claim 3 wherein the conversation logic is for the exclusive use of a given composite service.

6. The method of claim 3 wherein the conversation logic is shared by two or more composite services.

7. The method of claim 3 wherein the conversation logic is not defined in a workflow at process definition time, the workflow defining a procedure that executes services.

8. The method of claim 3 further comprising:
interacting with a dynamic service discovery mechanism; and
dynamically discovering services.

9. The method of claim 3 further comprising the step of:
performing late binding of the conversation logic at run-time.

10. The method of claim 3 wherein the repository is one of a single central database and multiple distributed files.

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11. A system for dynamically selecting a conversation logic at run-time for a workflow definition that includes at least one node with no hard-coded conversation logic comprising:

a) a workflow engine for processing workflow definitions;

b) a conversation logic repository that includes at least one conversation logic and that is external to the workflow definition;

c) a dynamic conversation logic selection mechanism for receiving a service identifier that is associated with a service at run-time and based thereon for selecting a conversation logic for interacting with the service at run-time.

12. The system of claim 11 further comprising:

d) a source for services; wherein the source discovers services based on a service selection rule;

wherein the dynamic conversation logic selection mechanism (DCLSM) selects appropriate conversation logic from the conversation logic repository based on a discovered service.

13. The system of claim 12 wherein the source for services is one of a service broker, a service marketplace, an e-services platform, a company, and an entity.

14. The system of claim 11, wherein only services that have a conversation protocol compatible with one of the conversation logic available in the repository are selected.

15. The system of claim 11 wherein each conversation logic is associated with at least one service.

16. The system of claim 11 wherein the conversation logic is for the exclusive use of a given composite service.

17. The system of claim 11 wherein the conversation logic is shared by two or more composite services.

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18. The system of claim 11 wherein the conversation logic is not defined in the workflow definition at process definition time.

19. The system of claim 11 wherein the dynamic conversation logic selection mechanism performs late binding of the conversation logic at run-time.

20. The system of claim 11 wherein the conversation logic repository is one of a single central database and multiple distributed files.

21. The method of claim 1, wherein the conversation logic repository comprises plural conversation logic, wherein each of the plural conversation logic specifies a corresponding set of operations to be performed on a respective service, and wherein determining the corresponding conversation logic comprises selecting one of the plural conversation logic based on the discovered service.

22. The method of claim 3, wherein the conversation logic repository comprises plural conversation logic, wherein each of the plural conversation logic specifies a corresponding set of operations to be performed on a respective service, and wherein selecting a conversation logic comprises selecting one of the plural conversation logic.

23. The system of claim 11, wherein the conversation logic repository includes plural conversation logic, wherein each of the plural conversation logic specifies a corresponding set of operations to be performed on a respective service, and wherein the dynamic conversation logic selection mechanism selects one of the plural conversation logic that is associated with the service.

24. The method of claim 1, wherein the at least one conversation logic comprises a specification of operations to be performed on the determined service.

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25. The method of claim 1, wherein the at least one conversation logic comprises a specification of operations to be performed on a service identified by the returned service identifier.

26. The system of claim 11, wherein the at least one conversation logic comprises a specification of operations to be performed on a service identified by the returned service identifier.

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IX. EVIDENCE APPENDIX

None.

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X. RELATED PROCEEDINGS APPENDIX

None.

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